

Chukchi Sea, and Beaufort Sea, totaling over 158,000 km of effort. During the spring (March – May), ANMU were found along the Aleutian Islands and in the northern Gulf of Alaska. During the summer breeding season (June – 15 August), ANMU were found in the southern Bering Sea middle and outer shelf waters, primarily in late July and August. In the fall post-breeding season (16 August – October), ANMU were recorded in the Bering Sea middle and outer shelf waters and north into the northern Bering Sea and Chukchi Sea as far as 73.02°N. During this time, the greatest numbers were observed in September and October in Norton Sound (northeastern Bering Sea), a shallow area with abundant forage fish and euphysiids. In the Chukchi Sea, they were also observed in association with euphysiids. We speculate that the birds seen in the northern Bering Sea and the Chukchi Sea are post-breeding migrants from the Aleutian Islands, and possibly from the Russian coast, taking advantage of abundant prey in those areas in the fall.

ACTIVITY PATTERNS OF AUDUBON'S SHEARWATERS BREEDING IN THE BAHAMAS

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In highly pelagic seabirds, activity at sea can be influenced by breeding stage and environmental variables. Although analysis of activity patterns derived from global location sensing (GLS) data are becoming more commonplace, few data are available for shearwaters. We examined the activity patterns of Audubon's Shearwaters (*Puffinus lherminieri*), testing for differences in behavior of adults within and between successive breeding and non-breeding seasons. We tested for activity trends in response to breeding stage and moon phase. Wet/dry activity data were collected using geolocators attached to leg bands of Audubon's Shearwaters. Across stages, we found that the proportion of time spent on the water was significantly greater than the proportion of time spent flying or on land. However, preliminary analysis did not support evidence of differences in activity between pre-laying, incubation and chick-rearing stages. Preliminary analysis of spatial data suggests that duration of time spent at sea for breeding birds increases during moonlit nights. The relationship was strongest during nights when moonrise occurred before midnight and a high fraction of the moon was illuminated. Our study provides new insight into the activity patterns of Audubon's Shearwater.

INTERPOPULATION VARIABILITY OF CRESTED AUKLETS (*AETHIA CRISTATELLA*) BASED ON GENETIC AND MORPHOMETRIC DATA

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Crested auklets are a small seabird with bright plumage ornamentation and complex social behavior that breeds on the islands and coastlines of the Bering and Okhotsk seas. Outside the breeding season, auklets spend time at sea, and nothing is known about dispersion of young birds. Here we tested the morphometric and genetic variability of birds from different colonies. We collected data at Buldir I., Aleutians (June-July 1993), around the Kuril Islands (May-July 1997), in north-eastern waters of Kamchatka (May-June 1997-1998), at St. Lawrence I. (July-August 2001), at Talan I., the Sea of Okhotsk

(June-July 2008-2010), at Saint-Jonah (Iona) I., the Sea of Okhotsk (July 2009) and at Medny I., the Commander Islands (June-July 2011-2012). We measured body weight and wing, tarsus, bill, crest, auricular plume lengths (totally 310 birds from 5 colonies were analyzed). We conducted genetic analysis of the control region (408 b.p.) of mitochondrial DNA and 5 microsatellite loci (total 116 samples from 5 colonies were analyzed). One-way ANOVA with post-hoc Tukey test showed negligible effect of “population” on measured morphometric variables of birds ($p>0.05$ for most of comparisons). Also, no genetic differentiation between colonies was found. A high haplotypic ($H=0.994\pm0.002$) and relatively low nucleotide diversity (0.013 ± 0.007) were noted for all groups of auklets based on this mtDNA fragment, which is probably related to ecological peculiarities of the species and the history of formation of these colonies. We suppose that crested auklets from different colonies could spend winters in mixed flocks, and the gene flow between colonies could be very intense.

USING REMOTE CAMERAS TO MONITOR MONTANE SEABIRD BURROWS IN KAUA'I

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Monitoring the activity and fate of active nocturnal seabirds at breeding burrows can present a whole range of challenges, particularly if burrows are in remote locations or in habitats where repeated visits can result in significant damage to surrounding vegetation. We considered the use of remote cameras as a way to monitor Hawaiian Petrel *Pterodroma sandwichensis* and Newell's Shearwater *Puffinus newelli* burrows on the island of Kaua'i during the 2012 breeding season. Over the course of the season, a total of 10 Hawaiian Petrel and 14 Newell's Shearwater burrows were monitored using Reconyx Hyperfire PC900 cameras from the onset of the breeding season until they either fledged or failed. Reconyx cameras were chosen due to the fact that the infrared facility produced no glow (thus reducing disturbance) and trigger speed was extremely rapid producing images that were of near-video speed. Cameras recorded as yet unseen behaviour, as well as providing data on adult attendance, timing of arrivals and departures, amount of time spent outside of burrows (an important factor to consider in terms of vulnerability to predation), emergence period for juveniles, and fledging dates. Data was also collected on the prevalence of introduced predators at active burrows, with the vast majority visited by rats (*Rattus exulans* and *R. rattus*) and two visited by feral cats. A rat predation event was also caught on camera. Cameras proved to be an extremely useful tool for monitoring the target species. Limitations and logistical issues should however be considered and these are discussed.

MARINE AND TERRESTRIAL INFLUENCES ON SPATIAL AND TEMPORAL DISTRIBUTION OF THE MARBLED MURRELET IN THE PACIFIC NORTHWEST

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The Marbled Murrelet (*Brachyramphus marmoratus*) is a small, diving seabird in the alcid family that forages within nearshore marine waters and nests on limbs of old coniferous trees. The species is federally listed as Threatened in the USA in the states of Washington, Oregon and California. As part of the regional effectiveness monitoring program in support of the Northwest Forest Plan, we have been